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ABSTRACT

The report evaluates the Bilingual-Bicultural Project conducted in 1981-82 at Clara Barton High School, in Brooklyn, New York, for 50 Spanish speaking students with limited English proficiency (LEP). The project was designed to provide tutorial support to LEP students and to enable them to be placed in one of the more challenging health profession majors offered at the school. Additional help was provided to students in both English and Spanish language achievement, and in content area courses. The project also sought to help students to organize their studies, develop learning skills, and bolster their motivation to remain in school despite financial, cultural, and academic pressures. Quantitative analysis of student achievement among participants indicates that: (1) Spanish speaking students mastered 1.7 objectives per month of instruction; (2) program students demonstrated gains in pre- and posttest reading scores; (3) students in grades 10 and 12 demonstrated gains in mathematics performance; and (4) program students had better attendance rates than the school average. The report offers several recommendations regarding data collection and recordkeeping, scheduling of tutorial sessions, assessment of program impact, additional second language assistance, more challenging native language classes, formation of a bilingual club, and modification of the program objective concerning the Criterion Referenced English Syntax Test (CREST). (AOS)

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O.E.E. Evaluation Report

February, 1983

CLARA BARTON HIGH SCHOOL

BILINGUAL PROJECT

1981-1982

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Project Director:
Mr. Thomas J. Lenihan

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A SUMMARY OF THE EVALUATION
FOR THE BILINGUAL PROJECT
CLARA BARTON HIGH SCHOOL
1981-1982

This program, in its first year of funding, provided tutorial services to a target group of fifty Spanish-speaking students of limited English proficiency (LEP) in grades nine through twelve. More than half of the program students were born in the continental United States; others were born in Puerto Rico and the Dominican Republic, as well as other Central and South American countries. The school is not zoned, but selects applicants from any part of the city who want to prepare for one of nine health professions, and is organized as a "mini-college." Of the fifty program students, 45 came from communities in Brooklyn. Although program students varied in English-language proficiency, ability in Spanish, and overall academic preparedness, all took full programs of academic, vocational, and mandated courses in the mainstream.

The major goal of the program was to provide tutorial support to LEP students, thus enabling them to be placed in one of the more challenging health profession majors. (No formal E.S.L. instruction was available during 1981-1982 because the E.S.L. teacher who taught the course the previous year was on sabbatical.) In addition to helping students progress in both English- and Spanish-language achievement and content-area courses, the program sought to instill confidence and to help students organize their studies and develop learning skills. The program also hoped to offer students a unit within the school with which to identify in an effort to bolster their motivation to remain in school despite financial pressures, cultural adjustments, and possible limitations in the education they received in the native country.

The project received Title VII funding for two full-time staff positions: the project director responsible for program implementation and a paraprofessional who handled clerical tasks and record-keeping. Both staff members tutored students on an individual basis during lunch periods. Actual services received by students were difficult to document, however, since the project had not maintained a log of students who sought or received services. Supportive services to program students included tax-levy services from the school's grade advisors and guidance counselors and informal advice and encouragement from program staff. Both program staff members attended university courses; no other staff development activities were reported. Parents of program students participated in a Parents Bilingual Advisory Council. Parental participation was limited, however, since the school is not neighborhood-based.

Although it was difficult to assess the impact of the program's tutorial services, the potential impact on the school's admissions and programming policies may be significant. An increase in the number of Spanish-dominant students was expected, in addition to the placement of program students in the more demanding majors.

Students were assessed in English-language development (Criterion Referenced English Syntax Test [CREST]); reading in English (New York City Reading Test); mathematics performance (P.S.E.N.); and attendance (school and program records). Quantitative analysis of student achievement indicates that:

--In general, Spanish-speaking program students mastered 1.7 objectives per month of instruction on the CREST.

--Overall, program students demonstrated large gains from the pre- to the post-test on the New York City Reading Test (P.S.E.N.).

--Tenth- and eleventh-grade students demonstrated statistically and educationally significant gains on the P.S.E.N. The gains made by twelfth-grade students, although not quite statistically significant, were very educationally significant.

--The attendance percentage of program students was 6.7 percentage points higher than the attendance percentage of the school.

The following recommendations were aimed at increasing the overall effectiveness of the program:

--Record-keeping procedures should be implemented and maintained on a daily basis to document the number of students served by the program, the frequency of tutorial sessions, subject areas covered, language(s) used, and materials used. Any extra work done by students should also be maintained in folders in order to better monitor individual progress;

--Student achievement data must be recorded and submitted;

--Entry and exit criteria for the program should be clearly spelled out and applied. In addition, parents should be informed of these criteria;

--Problems with the scheduling of tutorial sessions should be addressed. Since the lunch-hour approach is problematic, the possibility of scheduling sessions during resource periods should be pursued if feasible;

--The impact of the program on the admissions and placement of Spanish-dominant students should be assessed in an attempt to evaluate whether program students have been placed in more challenging majors than they might have been without Title VII services;

--Since students' LAB scores indicate the need for more than intermittent E.S.L. assistance, the program director might discuss the need for additional E.S.L. instruction with the principal and other school administrators;

--Since program students indicated that their Spanish-language classes were not sufficiently challenging for native speakers, the project director might work with the assistant principal responsible for foreign-language instruction to review the suitability of Spanish-language courses for program students;

--The bilingual program might serve as a base for a Hispanic or bilingual club. The introduction of such a club might help to alleviate the lack of cohesion experienced by Hispanic students at Clara Barton.

--The program objective concerning the CREST test be modified in terms of observed student performance and the citywide E.S.L. objective.

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CLARA BARTON HIGH SCHOOL

BILINGUAL PROGRAM

Location:	901 Classon Avenue Brooklyn, New York 11225
Year of Operation:	1981-82, First year of funding
Target Language:	Spanish
Number of Participants:	50
Principal:	Ms. Sylvia Baliatt
Project Director:	Mr. Thomas J. Lenihan

I. CONTEXT

COMMUNITY SETTING

Clara Barton High School for Health Professions stands among the cultural facilities clustered near Brooklyn's Grand Army Plaza. It faces the Brooklyn Botanical Gardens, a few minutes walk from the Brooklyn Museum and the Brooklyn Public Library. Prospect Heights High School, the area's zoned school, is across the street.

This area of Brooklyn divides Park Slope and Prospect Heights from Crown Heights. Residents of the school's immediate vicinity are primarily black; a large West Indian population lives along Eastern Parkway, near Clara Barton. Hassidic Jews, who live in Crown Heights, are represented among the school's faculty, but not its student body. There is not a strong Hispanic presence in this area.

SCHOOL SETTING

Built in 1939 in art deco style, Clara Barton High School welcomes visitors into an impressive lobby, with a cathedral ceiling and a marble

staircase leading to the principal's office. The school's design reflects its original aim: to prepare young women for homemaking careers. Its classrooms, planned for 25 or fewer students, are crowded when utilized by current classes of between 32 and 51 students. The rooms are furnished with front alcoves designed for demonstration lessons, and with ample pantry space. A nine-million dollar renovation is soon to be undertaken to modernize some of its facilities and to make the building accessible to handicapped students, staff, and visitors.

The school is not zoned, but selects applicants from any part of the city who want to prepare for one of nine health occupations: bio-medical science, dental assisting, dental lab assisting, health assisting, human services, medical assisting, rehabilitative services, medical office assisting, and practical nursing. Describing the school's goals, the principal noted that the number of minority entrants into the several health fields -- medicine, pharmacology, dentistry, veterinary medicine, optometry, and osteopathy -- has recently decreased despite recruitment and education at the college level. Clara Barton begins sooner -- at the high school level -- to prepare students for further education in the health professions, or to secure jobs on graduation. The most rigorous of its programs leads to state certification as a licensed practical nurse.

The school is organized as a "mini-college." Students in grades nine and ten take, in addition to mandated and academic classes, courses which provide overviews of the health occupations. By the end of the tenth grade, each student selects a major. Because some majors are more demanding than others, grade advisors work toward matching students with majors accord-

ing to interest and ability, giving the first choice whenever possible. The major governs programming for the final two years, since requirements have been established for each major. To meet these requirements, students take heavy programs: most take six classes plus physical education and lunch. While teachers work either from period one to eight or two to nine, about a quarter of the student body attends school from period one to nine; practical nursing students are scheduled for ten periods per day.

The school stresses the sciences. A biology course visited by the evaluator, described as a "mastery learning" course, appeared to be more challenging than similar classes visited at other schools. The school tries, in its humanities courses, to integrate information about the health sciences. An English class was reading the novel Woman Doctor by Florence Haseltine, M.D., and Yvonne Yaw. The school's curriculum also provides opportunities for practical experiences. Students in the dental assisting program, for example, work with dentists in a functioning clinic, and dental lab assisting majors make false teeth. Other students do volunteer work in nearby hospitals.

The school's classrooms and corridors appear to be quiet and orderly. The building betrays no signs of vandalism. Barton's administration maintains a discipline unusual in public schools: the school day begins and ends with official classes, and students' coats are locked up during the day; students sit at assigned seats in the cafeteria. Disruptions by students are said to be rare; generally the threat of transfer to a student's zoned school is sufficient to improve behavior.

II. STUDENT CHARACTERISTICS

SCHOOOL POPULATION

At one time a school for girls, Clara Barton is now co-educational, but continues to enroll 90 percent female and 10 percent male students. The school's student body of 2,527 is almost entirely minority students, of whom 90 percent qualify for free lunch benefits. The ethnic breakdown of the school's population in 1981-82 was:

American Indian or Alaskan Native	3
Asian or Pacific Islander	31
Hispanic	475
White, non-Hispanic	15
Black, non-Hispanic	2003

Among Clara Barton's black students are many from the West Indies who live near the school. Hispanic students constituted about 19 percent of the school's enrollment; this figure is slightly lower than the percentage of Hispanic students in all Brooklyn high schools.* The assistant principal for guidance mentioned that Hispanic students might account for a larger proportion of Barton students if not for two factors: first, that Hispanic youngsters, especially girls, tend to go to local schools rather than a non-zoned school out of the neighborhood; and that the school's rigorous requirements and high academic standards have precluded the admission of students of limited English proficiency (LEP). (See Chapter III.)

Attendance at Clara Barton is generally high. On the day of the site visit, the posted figure -- 85 percent -- was posted with the heading, "bad news."

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*The New York City Board of Education's Annual School Census - Pupil Ethnic Composition Report (October 1980) stated that 21.6 percent of Brooklyn's high school students were Hispanic.

PROGRAM STUDENTS

Overview

While the program originally proposed to serve 75 students, that number was reduced when one paraprofessional was cut from the budget. The program got underway with 45 students in the fall; the number increased to 62 mid-year, and was 50 in May. Of the fifty program students, 45 came from communities in Brooklyn: Windsor Terrace, Crown Heights, and East New York. Four students came from Manhattan, and one from Queens. More than half were born in the continental United States; others were born in Puerto Rico, the Dominican Republic, Ecuador, Colombia, Panama, Guatemala, and El Salvador. Table 1 presents the number and percentages of students by countries of birth.

Of the fifty program students, eight were male -- approximately the same ratio as in the school. In the program office, male students were more visible than female. Several seemed to stop by the office frequently, either for tutorial help or just to say hello to the project director. (See Tables 2 and 3 for the distribution of students by sex and grade and age and grade.)

TABLE 1

Number and Percentages of Students by

Country of Birth

Language: Spanish

Country of Birth	Number	Percent
Puerto Rico	6	12
Dominican Republic	5	10
Guatemala	1	2
El Salvador	1	2
Panama	3	6
Colombia	1	2
Ecuador	3	6
Philippines	1	2
U.S.	28	57
TOTAL	49	100

.More than half of the students in the program are United States-born, speakers of Spanish.

.Foreign-born students were born in Puerto Rico, the Dominican Republic, and Central and South American countries.

TABLE 2

Number and Percentages of Students by Sex and Grade

Grade	Male N	Percent of Grade	Female N	Percent of Grade	Total N	Column Total: Percent of All Students
9			8	100	8	16.3
10	7	23	24	77	31	63.3
11			5	100	5	10.2
12	1	20	4	80	5	10.2
TOTAL	8	16	41	84	49	100

.Eighty-four percent of program students are female. This distribution by sex reflects the school's past curricular offerings: courses in preparation for homemaking careers.

.All students in grades 9 and 11 are female.

.Most students are in grade 10.

TABLE 3

Number of Students by Age and Grade

Age	Grade 9	Grade 10	Grade 11	Grade 12	Total
14	4				4
15	3	16			19
16	1	11	2		14
17		3	3	5	11
Total	8	30	5	5	48

Note. Shaded boxes indicate expected age range for the grade.

.Most program students are 15 years of age and in grade 10.

.The majority of students are at the grade level expected for their age.

Language Proficiency

About half the program students scored at or below the twentieth percentile on the English version of the Language Assessment Battery (LAB). (Figure 1 indicates the distribution of students' scores on the English LAB.) Most students did better on the Spanish version: half of those for whom scores were available scored above the fiftieth percentile. Comparing program students' grades with their LAB scores, the evaluator found that those who scored well in English and Spanish were doing well academically. Those with high LAB scores in Spanish were generally doing well even if their English LAB scores were very low. Thirteen students with English scores below the twenty-first percentile but scores above the fiftieth percentile on the Spanish LAB were for the most part performing well. One student, for example, maintained a 90 average in the honors' track although he had scored in the fourth percentile in English; he scored in the eighty-fifth percentile in Spanish. Students with low scores on the Spanish LAB were generally failing four or five of their courses. The other group of students failing most consistently were the eight U.S.-born students with English LAB scores below the twenty-first percentile.

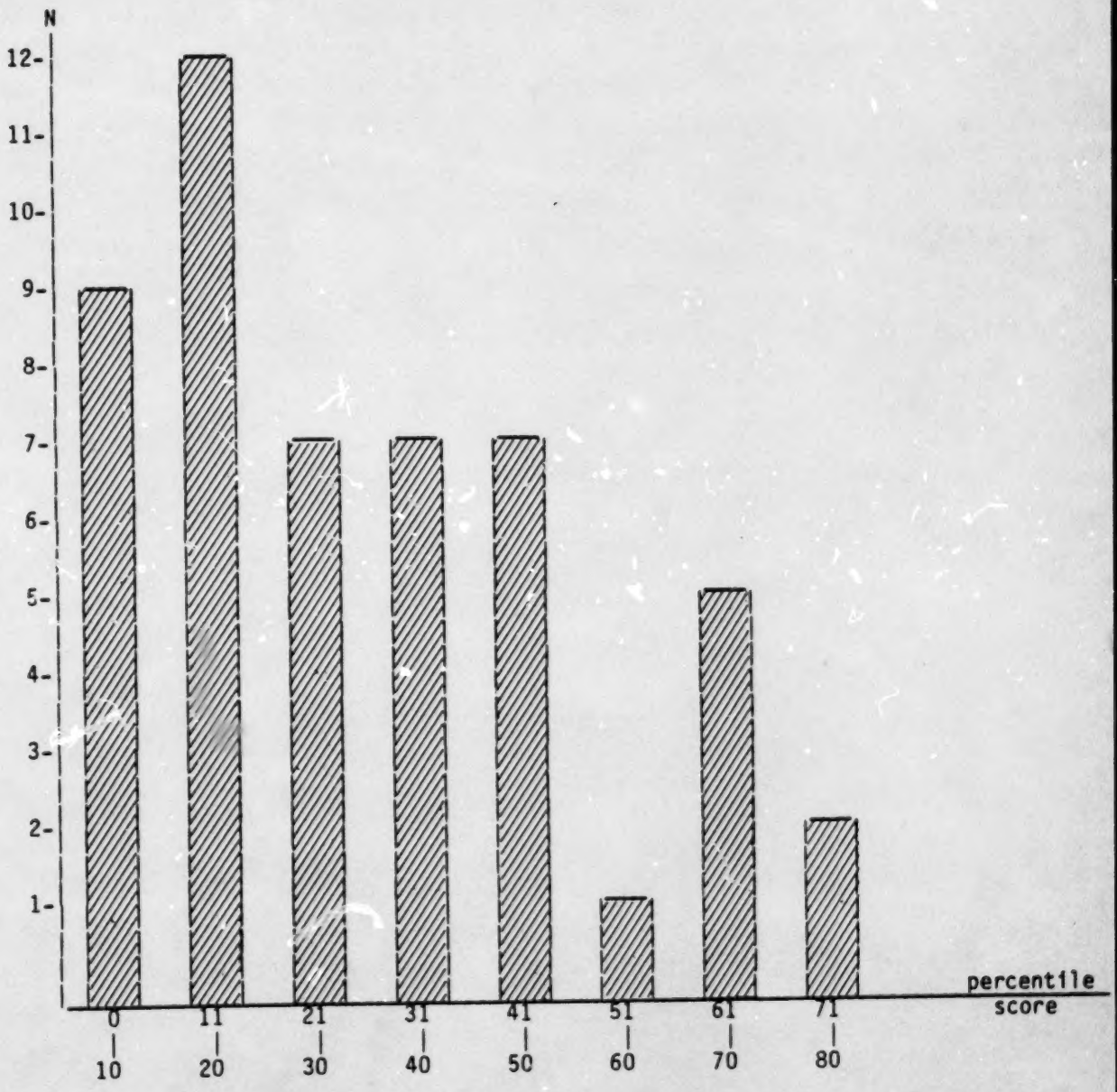
Students seemed to be having the greatest difficulties with biology and world studies. Of 11 program students enrolled in biology 2, six had failed.

The program director stated that most program students speak Spanish with friends; code-switching is typical. Most are more fluent in Spanish than English. Others speak English quite well, but experience interference in reading English texts.

FIGURE 1

Distribution of Program Students' Scores

on English Language Assessment Battery (N=50)



III. PROGRAM DESCRIPTION

GOALS

The bilingual program at Clara Barton operates in a setting where LEP students would be expected to encounter academic problems. Every member of the faculty or administration interviewed by the evaluator stressed the demands placed on Clara Barton students, who take science and health courses in addition to mandated subjects. Except for the Title VII program, there were no supportive services geared to help bilingual students compete with their English-dominant peers. The non-graded English as a second language (E.S.L.) class offered the previous year was not offered in 1981-82; the principal said this was because the E.S.L. teacher was on sabbatical.

The program was designed to provide tutorial support to LEP students (those scoring at or below the twentieth percentile on the LAB). The program director said that in addition to helping with content-area courses, the program sought to instill confidence and to help students organize their studies and develop learning skills.

The program proposal predicted that Title VII services would result in:

--progress toward proficiency in English;

--significant gains in Spanish-language achievement;

--success in content areas comparable to that of English-dominant Barton students;

--attendance records comparable to those of English-dominant Barton students.

The proposal also stated that the program would work toward parental participation, staff training, and follow-up services for mainstreamed participants.

By offering students a unit within the school with which to identify, and by making staff available for advice and encouragement the program hoped to bolster students' motivation to remain in school despite the economic strain many experience at home, to reduce the impact of culture shock, and to compensate for possible limitations in the education they received in the native country.

ORGANIZATION

Program implementation was delayed until mid-October. The proposal had been submitted on February 13, 1981, but the official grant notification arrived from Washington only on October 15. At that time, the Division of High Schools authorized the project director's release from classroom responsibilities.

The project received funding for two full-time staff positions: the project director responsible for program implementation, and a paraprofessional who would carry out clerical tasks and record-keeping. Both staff members tutored students on an individual basis during lunch periods.

The project was originally housed on the first floor, near the cafeteria. Its convenient location allowed students to stop by after eating lunch; noise created by the many students taking part in a drug-prevention program, separated from the bilingual office by a glass partition, hampered

tutoring however, and the project was moved to a large, quiet room on the third floor.

NEEDS ASSESSMENT

By the time the program was underway in October, eligible students had been identified on the basis of LAB scores and teachers' recommendations. Preliminary grades were already available, so that the project director could analyze, subject by subject, students' academic liabilities. Passes were given to official teachers of eligible students; when students came to the office, the project director or paraprofessional explained that they needed extra tutoring. Students were issued daily passes and were invited to come to the program office during their lunch period, after they had finished eating, whenever they needed help. Parents were apprised of students' participation.

SCHEDULING

Program students take full programs of academic, vocational, and mandated courses in the mainstream. All participants take Spanish; all other courses are taught in English.

The program was originally designed to operate on a pull-out basis. However, tutorial sessions did not fit easily into the already hectic schedules of Barton students. Tutoring therefore took place during the school's four 40-minute lunch periods. Participating students would typically eat lunch in 15 or 20 minutes, then visit the program office for 20 minutes of tutoring. Two factors cut into tutorial time, however. First, Barton students occupy assigned seats in the cafeteria and are summoned table by table to the cafeteria line; students sometimes could not get their lunch for some time.

Secondly, the program office was some distance from the cafeteria. Students were issued elevator passes for the lunch period to save time, but these were often not honored by the elevator attendants.

TUTORIAL SERVICES

The project director estimated that two or three students came for tutorial help during each lunch period, for a total of eight to ten per day. This number corresponded with the evaluator's observations during two days spent at the school. Actual services received by students were difficult to document, however, since the project had not maintained a log of students who sought or received services. Working from a list of 50 project students, the director estimated that 27 came with some regularity, 13 sometimes appeared, and 10 rarely asked for help. Those who came for help most frequently were tenth graders; of the ten juniors and seniors, one came frequently for assistance. The evaluator gained the impression that several students "checked in" at the office very often, sometimes for tutorial help and other times just to say hello, and that the same students tended to ask for and receive help often. The project director said that students come whenever they want to, but most often before tests. "Before a holiday almost no one comes," he added. The paraprofessional mentioned that one student came daily for three months for help in two subjects.

The project director and paraprofessional often assisted students with content-area subjects, particularly with biology. In some cases, students were helped, in tutorial sessions, to develop their own study aids, for example, to make flash cards of difficult biology terminology.

When students asked for help in math, they were sometimes referred to a volunteer tutor, who visited the school on a weekly basis to work with honor-track students but who helped bilingual program participants. Otherwise, students could work with either staff member. The project director said that boys tended to work with him while girls often sought out the female paraprofessional for assistance.

When students came for assistance but had no specific problems, staff members would offer help with English (sometimes asking the student to to write a brief composition on the spot, and reviewing it with him or her), or with study skills.

Both English and Spanish were used during tutorial sessions, depending on the work being covered. It appeared that Spanish was used for informal conversation, while English was used to talk about academic subject matter. The project director said that they generally work in English. Students interviewed during the site visit said that they never came for help with Spanish.

NON-INSTRUCTIONAL ACTIVITIES

Parental Participation

The project organized a Parents' Bilingual Advisory Council, consisting of seven parents. Two meetings were held: one in May, 1980 to explain the program, and another during 1981-82. It was difficult to enlist parents' participation since the school is not neighborhood based, and many students live some distance from Clara Barton.

Staff Development

The bilingual staff consisted of two individuals: the project director, who holds state and city certification in Spanish and bilingual guidance and has six years of experience in bilingual education; and a paraprofessional, who holds an A.A. degree and has four years of experience in bilingual education and six years in E.S.L.

Both staff members attended university courses: the coordinator was taking courses in guidance and special education during summer 1982, and the paraprofessional was attending education courses at Brooklyn College twice per week during the school year.

No other staff development activities, in school or out of school, were reported.

Supportive Services

In addition to tax-levy services from the school's grade advisors and guidance counselors, students received informal advice and encouragement from the program staff. The project director stated that program students failed to achieve the same attendance figures as the school as a whole. He stated that this would be difficult, since Clara Barton has such a high attendance rate.

POTENTIAL IMPACT OF THE PROGRAM

While it is difficult to assess the impact of the program's tutorial services, conversations with the assistant principal for guidance and the grade advisor suggested that the program's potential impact on the school's admission and programming policies may be significant.

Impact on Admission Policy

In the absence of supportive services, Clara Barton's administration has been reluctant to admit students of limited English proficiency, who might have difficulty with the school's curriculum. The assistant principal for guidance suggested that with a tutorial program, the faculty is more confident about teaching Spanish-dominant students, and bilingual students feel more secure at Clara Barton. "In the past they didn't feel they had a role here," he said, citing the small Hispanic population in the school's vicinity, and the lack of clubs or extracurricular activities geared to bilingual students. He added, "With Title VII support, we predict an increase in the number of Hispanic students at Barton in the fall of 1982. A number of students were added on this basis and there would be considerable growth reflected in the fall 1982 statistics." The percentage of Hispanic students for the four preceding years were:

1978	21%
1979	19%
1980	20%
1981	19%

Impact on Programming

At the end of the tenth grade, students submit first, second, and third choices for a health profession major. A grade advisor then assigns students to majors on the basis of both interest and ability: the majors, which vary in terms of academic difficulty, range from medical office assisting, the least demanding, to practical nursing, the most rigorous.

The grade advisor stated that in the absence of supportive services, she would be reluctant to assign a student who was not a native speaker of English to practical nursing, bio-medical science, or one of the other more

challenging majors which require courses in body structure and function, chemistry, and other relatively sophisticated science classes in addition to regular academic subjects. However, knowing that one-to-one assistance is available to LEP students, she is often willing to allow a student to elect a more demanding major, one which opens up a more rewarding career path. She mentioned one student whom she assigned to his first choice, health assisting, rather than medical office assisting, because he was in the Title VII program.

She added that the bilingual program had already affected both the major requests of students -- who had gained the confidence to set higher goals, and her final programming decisions. While half of the current upper-graders were enrolled in medical office assisting, the least demanding major, fewer than a fourth of the current tenth graders had been assigned to this major. Six tenth graders had been assigned to the bio-medical science major, and one was assigned to practical nursing.

IV. FINDINGS

ASSESSMENT PROCEDURES, INSTRUMENTS, AND FINDINGS

The following section presents the assessment instruments and procedures, and the results of the testing to evaluate student achievement in 1981-1982.

Students were assessed in English-language development and growth in their mastery of mathematics. The following are the areas assessed and the instruments used:

English as a second language -- CREST (Criterion Referenced English Syntax Test), Levels I, II, III)

Reading in English -- New York City Reading Test (P.S.E.N.)

Mathematics performance -- New York City Mathematics Test (P.S.E.N.)

Attendance -- School and program records

The following analyses were performed:

On pre/post standardized tests of English reading and mathematics achievement statistical and educational significance are reported in Tables 5 and 6, respectively.

Statistical significance was determined through the application of the correlated t-test model. This statistical analysis demonstrates whether the difference between pre-test and post-test mean scores is larger than would be expected by chance variation alone; i.e. is statistically significant.

This analysis does not represent an estimate of how students would have performed in the absence of the program. No such estimate could be made because of the inapplicability of test norms for this population, and the unavailability of an appropriate comparison group.

Educational significance was determined for each grade level by calculating an "effect size" based on observed summary statistics using the procedure recommended by Cohen.* An effect size for the correlated t-test model is an estimate of the difference between pre-test and post-test means expressed in standard deviation units freed of the influence of sample size. It became desirable to establish such an estimate because substantial differences that do exist frequently fail to reach statistical significance if the number of observations for each unit of statistical analysis is small. Similarly, statistically significant differences often are not educationally meaningful.

Thus, statistical and educational significance permit a more meaningful appraisal of project outcomes. As a rule of thumb, the following effect size indices are recommended by Cohen as guides to interpreting educational significance (ES):

a difference of 1/5 = .20 = low ES

a difference of 1/2 = .50 = moderate ES

a difference of 4/5 = .80 = high ES

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*Jacob Cohen. Statistical Power Analysis for the Behavioral Sciences (Revised Edition). New York: Academic Press, 1977 Chapter 2.

The instrument used to measure growth in English language was the Criterion Referenced English Syntax Test (CREST), which tests mastery of specific syntactic skills at three levels. Material at the beginning and intermediate levels of the CREST is broken down into 25 objectives per level, such as present-tense forms of the verb "to be" (Level I), or possessive adjectives and pronouns (Level II). Material at the advanced level (Level III) is organized into 15 objectives, such as reflexive pronouns. At each level, students are asked to complete four items for each objective. An item consists of a sentence frame for which the students must supply a word or phrase chosen from four possibilities. Mastery of a skill objective is determined by a student's ability to answer at least three out of four items correctly.

This report provides information on the average number of objectives mastered and the average number of objectives mastered per month of treatment by students who received E.S.L. instruction (Table 4).

Rates of success of students in mathematics and reading in English are reported by grade for students who were pre- and post-tested with the same test level. These tables contain the numbers of students by grade, the difference between the pre- and post-test, the standard deviation for each average score, the t test, and level of statistical and educational significance.

Comparisons of the attendance rates of program participants with that of the school as a whole are presented in Table 7. This table contains the average rate for the school and for the various participant groups, the percent differences, values of the z statistic, and its level of statistical significance. Although the z statistic used here is slightly different than that described above, it again indicates the extent to which the observed percentage differences vary from what might be expected by chance.

TABLE 4

Performance of Students Tested on the Criterion Referenced English Syntax Test (CREST): Average Number of Objectives Mastered by Grade and Test Level

(E.S.L. Spanish-Speaking Students)

		LEVEL II				
Grade	Average Months of Treatment	N	Average Number of Objectives Mastered Pre	Post	Gain[a]	Gain/ Month
9	6.1	8	14.1	23.5	9.4	1.5
10	6.1	28	13.3	23.6	10.4	1.7
11	6.1	3	8.7	21.0	12.3	2.0
12		----------				
TOTAL	6.1	39	13.1	23.4	10.2	1.7

Note: Number of objectives for each level: Level I (25), Level II (25), Level III (15).

.All of the Spanish-speaking students were pre- and post-tested at Level II.

.In general, Spanish-speaking program students mastered 1.7 objectives per month of instruction. This was a good rate, although below the five objectives set as the program criterion (see Recommendations).

.In grade 9, 1.5 objectives were mastered per month of instruction, in grade 10, 1.7 objectives were mastered per month of instruction, and in grade 12, two objectives were mastered per month of instruction.

TABLE 5

English Reading Achievement

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in English Reading Achievement of Students with Full Instructional Treatment on the New York City Reading Test by Grade and Test Level

Test Level	Grade	N	Pre-Test Mean	Pre-Test Standard Deviation	Post-Test Mean	Post-Test Standard Deviation	Mean Difference	Corr. Pre/post	T-test	Level of Significance	Educational Significance
9	9	7	49.8	13.5	53.0	13.6	3.1	0.94	1.78	NS	0.85
10	10	22	44.0	7.7	48.6	9.8	4.5	0.63	2.73	0.01	0.73
11	11	3	39.0	6.2	42.2	13.7	3.3	0.91	0.68	NS	1.7
12	12	3	50.0	7.9	49.6	7.2	-.333	0.99	-0.50	NS	-.57

.Tenth-grade students were the only group to demonstrate a gain which was statistically and educationally significant. The ninth and eleventh grades did, however, show educationally significant increases.

TABLE 6

Mathematics Achievement

Significance of Mean Total Raw Score Differences Between Initial and Final Test Scores in Mathematics Achievement of Students with Full Instructional Treatment on the New York City Mathematics Test (P.S.E.N.) by Grade

Grade	N	Pre-Test Mean	Pre-Test Standard Deviation	Post-Test Mean	Post-Test Standard Deviation	Mean Difference	Corr. Pre/post	T-test	Level of Significance	Educational Significance
9	7	32.14	9.17	31.14	7.56	-1.00	0.778	-0.46	.663	.26
10	22	33.10	5.67	35.14	6.81	2.04	0.829	2.52	0.02	.68
11	3	23.67	8.08	32.33	8.33	8.67	0.991	13.00	0.006	1.41
12	2	33.00	2.83	40.00	1.41	7.00	-1.00	2.33	0.26	1.30

.Thirty-four program students were pre- and post-tested with this test.

.Both tenth- and eleventh-grade students demonstrated gains that were statistically and educationally significant.

.Twelfth-grade students showed a large gain from the pre- to the post-test which, although not quite statistically significant, was determined to be of high educational significance.

TABLE 7

Significance of the Difference Between Attendance Percentage of Program Students and the Attendance Percentage of the School

Grade	N	Mean Percentage	Standard Deviation
9	8	90.3	7.9
10	30	94.5	3.7
11	5	87.8	3.1
12	5	94.9	6.3
TOTAL	48	93.1	5.2

Average School-Wide Attendance Percentage: 86.13

Percentage Difference = 6.9 z = 1.34 p = NS

.Program students had a 93.1 average attendance rate.

.The difference (6.9 percentage points) between the attendance percentage of program students (93.1 percent) and the attendance percentage of the school (86.1 percent) is not significant statistically.

.The mean percentage ranged from a low of 87.8 in grade 11 to a high of 94.9 in grade 12.

.The standard deviation ranged from a low of 3.1 in grade 11 to a high of 7.9 in grade 9.

SUMMARY OF FINDINGS

English Reading Achievement

Overall, all program students demonstrated large gains from the pre- to the post-test on the New York City Reading Test. Altnough the tenth-grade students were the only group to show an increase that was both statistically and educationally significant, the ninth and eleventh grades did exhibit educationally significant differences.

In general, Spanish-speaking program students mastered 1.7 objectives per month of instruction on the Criterion Referenced English Syntax Test (CREST).

Mathematics Achievement

In general, the response to the New York City Mathematics Test were quite good for all students. Although the tenth- and eleventh-grade students were the only grades to demonstrate gains that were both statistically and educationally significant, the twelfth grade showed a large increase from the pre- to the post-test that was highly educationally significant.

Attendance

Although the difference between the attendance percentage of program students and the attendance percentage of the school is not statistically significant, the percentage is higher for the program students.

Additional Tests

The project also proposed to assess student outcomes in Spanish by using the Interamerican Series, La Prueba de Lectura, as well as student outcomes in mathematics, science, and social studies but did not provide data in these areas.

V. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Once it became operative in October, 1981, the bilingual program at Clara Barton provided tutorial services to Spanish-speaking students. About half of these students met the eligibility criterion specified in the proposal -- that is, they had scored below the twentieth percentile on the Language Assessment Battery. The remaining students were recommended by classroom teachers.

Students came for tutoring on a voluntary basis during their lunch periods. There was no set schedule, no curriculum, and no clear pattern of attendance. The program did not maintain records to document the number of students served, the frequency of services, subject areas covered, or materials used. Students' work was not available in folders or any other form for the evaluator to review. It is therefore difficult to draw firm conclusions about the implementation of the program, no less its success. It appeared, during site visits, that at least a handful of students were calling on the two full-time staff members for help, and that a few looked upon the program office as a home base -- a place to check in between or after classes. It is altogether possible that the program in this way furnishes support which is not quantifiable. However, in the absence of documentation, it can be concluded only that two full-time staff members provided intermittent tutorial help to 50 students, of whom half sought assistance on a somewhat regular basis.

The program's major impact may not yet be felt, however. In the absence of supportive bilingual services, the school has been reluctant or

unwilling to admit LEP students. Those students who were enrolled were often placed in the least challenging major, leading to relatively low-paying jobs which may not tap their abilities. The presence of the Title VII program may have a substantial impact on these practices. In turn, these policies may place greater demands on the program's tutorial services.

RECOMMENDATIONS

1. Record-Keeping: In order to better document program activities, it is recommended that records be maintained on a daily basis to document:

--the number of students served;

--the frequency of tutorial sessions;

--subject areas covered;

--language used;

--materials used.

If staff members ask program students to complete extra work, such as compositions in English, these might be maintained in permanent folders so that individual progress might be better assessed.

2. Participant Selection: Entry and exit criteria should be modified to reflect existing program practice. The proposal stated that the program would serve students scoring at or below the twentieth percentile on the LAB. In fact, about half of the program students scored above this level. These students were offered tutorial assistance on teacher recommendations, as they required additional support to function effectively in English language classes.

3. Scheduling: The lunch-hour approach to tutoring is problematic, because students may not have the opportunity to get the support they need. The project director stated that he had discussed with the principal the possibility of scheduling program students for resource periods; if this is feasible, it should be pursued.

4. Impact of the Program on Admissions and Placement: Future evaluations might document the extent to which Spanish-dominant students have been recruited and enrolled at Barton, and might attempt to gauge whether program students have indeed been placed in more challenging majors than they might have been without Title VII services.

5. English as a Second Language: On the basis of many students' LAB scores, Spanish-dominant students at Barton appear to need E.S.L. instruction, which was offered in 1980-81 but not in 1981-82. As E.S.L. addresses an important need for LEP students, it is recommended that the program director discuss this issue with the principal and other school administrators to facilitate the provision of E.S.L. instruction.

6. Spanish-Language Instruction: Program students interviewed by the evaluator stated that their Spanish-language classes were not sufficiently challenging for native speakers. The project director might work with the assistant principal responsible for foreign-language instruction to review the suitability of Spanish-language offerings for program participants.

7. Bilingual Club: Members of the guidance staff mentioned lack of cohesion as one of the problems experienced by Hispanic students at Clara Barton. While the school has several active clubs, including a West Indian

Club, there seem to be no extracurricular activities oriented to the native culture of Hispanic students. The bilingual program might serve as a base for a club or for other activities.

8. Parental Involvement: The minutes of a May 1980 orientation meeting for parents revealed that some participants were confused about the services offered by the program to their children. The program might therefore consider producing an information sheet or "newsletter" for parental distribution which would include the program's aims and activities, student eligibility criteria, dates for future parent meetings, student achievement, etc.

9. Evaluation Objectives: The program objective of students mastering five curricular objectives per month of instruction is inappropriate, as it far beyond that set for students in Title I high school E.S.L. programs (one CREST objective mastered per month). It is recommended that in the future the program objective concerning the CREST test be modified in terms of observed student performance and the citywide E.S.L. objective.